NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Report Form for Water Conservation Plans Small Community Water Systems February 2006

PROJECT NAME Magarian Property - DES Project # 997096

TOWN/CITY Pelham DATE July 26, 2006

EPA ID # not yet issued

PURPOSE This form provides the information needed for small community water systems to meet the reporting requirements of Env-Ws 390, *Water Conservation Rules.* Once completed, this form can fulfill the requirements of Env-Ws 390.10. You don't have to use this form. However, based on experience, the DES has found that use of a form speeds the application process. If you prefer to produce an original report, remember to provide **all the information** required under the rules and the DES recommends that you use this form as a checklist to help ensure your report is complete. Helpful information and reminders are provided throughout the form and are printed in (parenthesis). Copies of this form, the rules, a summary of the rules, educational materials for public distribution, and other useful publications may be found at http://www.des.nh.gov/h2o_conservation.htm.

INSTRUCTIONS

A. Obtain copies of the following materials from either the DES's Public Information Center (603) 271-2975 or from http://www.des.nh.gov/h2o_conservation.htm.

- Administrative Rule, Env-Ws 390, *Water Conservation Rules.*
- Fact sheet, *Summary of the Water Conservation Rule.*
- Any pertinent water efficiency fact sheet.
- Extra copies of this form.

B. Review the water conservation rules and guidance materials obtained above. You should

use these materials to prepare your water conservation plan. It is suggested that you submit a draft plan for review prior to meeting your public notification requirements in case substantive changes to the plan are necessary. Resubmittal of the report to the public entities can be avoided if initial review is performed by the DES.

C. Complete the form by answering all questions and providing the appropriate attachments. Answer the questions from top to bottom, unless instructed to skip to another section. Helpful information and reminders are provided throughout the form and are printed in (parenthesis).

D. Before submitting, review the form to ensure all questions are answered and all attachments are included. When complete submit to:

Water Conservation Plans
Small Community Well Siting Program
DES, Water Supply Engineering Bureau
Post Office Box 95
Concord, NH 03302 -0095

For help with this form or other water conservation planning concerns call Diana Morgan at (603) 271-2947.

Information contained in this form is current as of February 2006. Statutory or regulatory changes that may occur after October 2005 may cause part or all of the information to be invalid. If there are any questions concerning the status of the information please contact DES at (603) 271-2947.

Section 1.0 GENERAL INFORMATION

WELL SITING

Has a Preliminary Well Siting report been submitted to the DES? *(If your answer is NO, please contact the DES at (603) 271-2947 before you proceed further.)*

YES ___ NO x (the Preliminary Well Report is complete except for a revised site plan)

(The section below asks you to identify the people and companies responsible for the water conservation plan application. This information will help ensure clear communication during the application process.)

1.1 Project Contacts / System Ownership

1.1a Project Contact (Person completing this form?)

Name Steven Shope
Address P.O. Box 451, Exeter, NH 03833-0451
Company Exeter Environmental Associates, Inc.
Phone Number 603-778-3988

1.1b Project Owner (Who is responsible for compliance with the water conservation plan, as approved by the DES?)

Name Ken Magarian
Address 135 Llewellyn Street, Westfield, MA 01085
Company Magarian Development, LLC
Phone Number 413-572-5406 (work)

1.1c Person responsible for completing the activities outlined in this plan (Please note that the person completing water conservation plan activities must be a certified water system operator or water system personnel supervised by the certified operator.)

Name A certified water system operator has not yet been selected,
Address but will be selected once the well location has been approved.
Company
Phone Number

1.1d Will ownership of the water system be transferred at a future date from the person listed in 1.1b to a homeowner's association or other entity?

YES x NO ___

If YES, indicate below the contact information for the new owner of the water system.

Name The homeowner's association has not yet been formed.
Address
Company
Phone Number

Section 2.0 METERING AND LEAK DETECTION

(This information is needed to help ensure the water conservation plan will meet the intended purpose and that the plan is designed appropriately.)

2.1 Water System

2.1a Is this a new source for an **existing** community water system?
YES___ NO_x_ (If YES, you must complete Sections 2.3, 3.0, 5.0 and 6.0)

2.1b Is this a new source for a new or existing community water system owned by a landlord who supplies water to tenants and includes water service in rental fee, or a new or existing community water system for apartment-style housing that includes water service in a housing fee?
YES ____ NO _x__ (If YES, you must complete Sections 2.3, 3.0, 5.0 and 6.0)

2.1c Is this a new source for a **new** community water system that does not meet the description in (a) or (b) above?
YES_x_ NO___ (If YES, you must complete Sections 2.2, and 3.0 through 6.0)

2.2 New Small Community Water Systems

(Meters must be installed on all sources of water and at each service connection on new small community water systems that do not meet the definition of 2.1a or 2.1b above.)

2.2a Describe below the size of both the source and service connection meters to be utilized by the water system. (In selecting, installing, and maintaining water meters, the water system must comply with procedures and protocols described in "Manual of Water Supply Practices, Water Meters", document AWWA M6, available from the American Water Works Association. www.awwa.org/bookstore)

The source and service connection meters to be utilized by the water system have not yet been specified. However, they will be selected so that they comply with AWWA M6 "Manual of Water Supply Practices, Water Meters."

2.2b Describe below the frequency in which each type of meter will be read. (Source meters must be read at least every 30 days and service meters must be read at least every 90 days.)

The source meters will be read at least once every 30 days. The service meters will be read at least once every 90 days.

2.2c Water Audit and Leak Detection Program and Estimating Unaccounted-For Water

Describe below the system's water audit and leak detection program and how the water system will estimate the volume and percentage of unaccounted-for water. Also note how often the water system proposes estimating unaccounted-for water. (All new small community water systems or existing small community systems that are adding new connections, must meet this requirement. Estimates of unaccounted-for water must be performed at least once a year. If unaccounted-for water exceeds 15 percent, the system shall develop a response plan in accordance with Env-Ws 390.05(j) and (k), and submit it to the DES within 60 days.)

The water audit and leak detection program will be conducted at least once per year. If meter discrepancies indicating a leak that exceeds 15% of the water being produced, then the water system shall develop a response plan in accordance with Env-Ws 390.05(j) and (k). This plan will be submitted to DES/WSEB within 60 days of a discrepancy of >15% being identified.

2.3 Existing Small Community Water Systems, New or Existing Water Systems Owned by a Landlord Who Supplies Water to Tenants and Includes Water Service in a Rental Fee, and New or Existing Water Systems for Apartment-Style Housing

(If no further expansion of an existing small community water system is planned, or this is a new system that meets the definition in Section 2.1 (b), the water system has the choice to either:

1. Install meters on all service connections within three years of approval of the plan and estimate unaccounted-for water [see section 2.3d], or
2. Conduct a comprehensive leak detection survey every two years [See section 2.3e].

If further expansion of an existing system is proposed, meters must be installed on all new services, regardless of whether the system opts to conduct a leak detection audit rather than metering.)

2.3a Is your system choosing to install meters on your existing or new system to track unaccounted-for water **or** is your system adding new service connections to your existing system?

YES___ NO___

If **YES**, your system must estimate unaccounted-for water annually, complete sections 2.3b, 2.3c and 2.3d. If you answered **NO**, your system must perform a leak detection survey every two years, go to section 2.3e.

2.3b Describe below the size of both the source and service connection meters to be utilized by the water system. (In selecting, installing, and maintaining water meters, the water system must comply with procedures and protocols described in "Manual of Water Supply Practices, Water Meters", document AWWA M6, available from the American Water Works Association. www.awwa.org/bookstore)

2.3c Describe below the frequency in which each type of meter will be read. (Source meters must be read at least every 30 days and service meters must be read at least every 90 days.)

2.3d Estimating Unaccounted-For Water

Describe below the system's water audit program and how the water system will estimate the volume and percentage of unaccounted-for water. Also note how often the water system proposes estimating unaccounted-for water. (Existing small community water systems opting for metering and water accounting, or existing small community systems that are adding new connections, must meet this requirement. Estimates of unaccounted-for water must be performed at least once a year. If unaccounted-for water exceeds 15 percent, the system shall develop a response plan in accordance with Env-Ws 390.05(j) and (k), and submit it to the DES within 60 days.)

2.3e Water Audit and Leak Detection Program

Describe below who will be responsible for conducting a leak detection survey, the frequency of the surveys and a brief text description of how those surveys will be conducted. (Surveys for existing systems that are opting out of metering service connections shall be performed at least every two years. Leaks identified by the survey must be repaired within at least 60 days unless a waiver is obtained from the DES. The requirements of this section of the rule must follow the standards set forth in AWWA M36, *Manual of Water Supply Practices, Water Audits and Leak Detection*, available from the American Water Works Association. www.awwa.org/bookstore)

Section 3.0 PRESSURE REDUCTION

(Pressure reduction shall be implemented upon obtaining approval of a new source of water when it is technically feasible, consistent with industry standards, and consistent with public health and safety considerations. Existing small community water systems have one year after approval of the conservation plan to implement this requirement, if feasible. All pressure reduction measures must meet the requirements of Env-Ws 372, Design Standards for Small Community Public Water Systems.)

Is pressure reduction technically feasible for this system? If **YES**, explain below how it will be accomplished for the system. If **NO**, explain why below.
YES___ NO___

Pressure reduction will be implemented when it is technically feasible, consistent with industry standards, and consistent with public health and safety considerations. The pressure reduction measures, when feasible, will be conducted to meet the requirements of Env-Ws 372.

Section 4.0 CONSERVATION RATE STRUCTURE

(All new small community water systems and existing small community water systems that are adding new service connections must adopt a rate structure as described in Env-Ws 390.04.)

Describe below the conservation rate structure the water system proposes adopting, or if not practical or feasible for the system, describe below how the water system will manage water service fees to meet the intent of the rule and promote water conservation. (You will need to fill out a waiver application form found at the end of this document.)

A conservation rate structure has not yet been developed, but a rate structure that encourages conservation will be developed by the homeowners association, once the association takes control of the water system. The association will take control of the water system once greater than 50% of the units are sold.

Section 5.0 PUBLIC NOTIFICATION

(Within seven days of submitting the final water conservation plan for review by the DES a small community water system must provide a copy of this report via certified mail to the governing board of the municipality in which a proposed source is located, to all wholesale customers [if any], and to the regional planning commission for the location of the proposed source. The water system shall supply the governing boards with a copy of a summary of the requirements of Env-Ws 390. This document can be found at http://www.des.nh.gov/h2o_conservation.htm. You must also note in your correspondence to the above-mentioned governing boards that a copy of the Well Siting Application is available for their review at the DES and provide them with DES contact information. The water system shall request that the governing boards amend any site plan submitted to them for review so that it reflects the requirements of Env-Ws 390 and promotes water conservation landscaping principals.)

List the names and addresses of the governing boards receiving public notification. Attach a copy of the cover letter sent to the governing boards and a copy of the certified mail receipts when available. List the educational/outreach materials that the system is providing to the municipalities for review.

See attached letter to the Pelham Selectmen and the Hillsborough County Conservation District office. Outreach materials include a copy of the Env-Ws 390 summary sheet.

Section 6.0 EDUCATIONAL OUTREACH INITIATIVE

(Such an initiative may be achieved in many ways, but must be implemented immediately upon approval of the conservation plan and should include the pertinent water efficiency fact sheets that can be found at the website listed at the beginning of this report. These educational mailings can be included with wellhead protection program educational mailings as required by Env-Ws 378.18 or with the water system service bills. Other acceptable outreach initiatives include water system or homeowner's association newsletters, posting of water conservation fact sheets in public areas used by water system customers, or any other initiative that meets the intent of the rules.)

Provide a brief description of your educational outreach initiative. Include implementation procedures, the person responsible for the initiative, the content of educational mailings proposed (if any), and the wording of any newsletter insertions or public postings. (There is no need to provide copies of educational outreach materials that you are acquiring from DES. Only provide copies of educational outreach materials generated by the water system.)

Public outreach materials published by DES will be distributed to individual homeowners within the association, along with the wellhead protection program mailings.

Before submitting, thoroughly check this form to be sure all applicable questions are answered, all information is provided, and all necessary attachments are included. Incomplete submittals will significantly slow the approval process.

If strict compliance with any of the requirements of Env-Ws 390 is not feasible, the small community water system may apply for a waiver to a specific portion of the rule. A waiver application form is provided at the end of this document for your convenience.

Preparer's Signature _____

Date _____

As a reminder, have you included the following?

- Educational outreach initiative documentation and materials created by the water system.
- Public notification documentation (certified mail receipts).
- Public notification cover letters and pertinent documents.
- Other pertinent or supportive materials.

Waiver Application

Project Name _____ Town/City _____

Date _____

Which section of the **rule** are you requesting be waived? Env-Ws 390._____.
Specifically, the requirement that states:

Explain why this requirement needs to be waived. Also describe what hardship would be caused if the rule were adhered to. Provide diagrams where helpful.

Explain an alternative solution in detail. Provide diagrams where helpful.

Explain how the alternative would adequately address water conservation measures as required by the rule.

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Water Conservation Rules (Env-Ws 390)

Applicants applying for permits to develop new sources of water need to be aware that they are subject to new water conservation requirements required by RSA 485.61 which became law in July 2002. The law requires that the Department of Environmental Services (Department) adopt and administer water conservation rules for applicants developing the following type of new water sources:

1. New sources of groundwater for community water systems subject to RSA 485:3;
2. New sources of groundwater for bottled and bulk water operations subject to RSA 485:3;
3. New sources of groundwater that exceed 57,600 gallons over any 24-hour period subject to RSA 485-C; and
4. New sources of surface water associated with projects that require a water quality certification pursuant to Section 401 of the Federal Clean Water Act..

The Department met with an advisory committee consisting of representatives of municipalities, community water systems, environmental organizations, and business and industry to develop the water conservation rules. The rules were formally adopted by the Department in May 2005.

A general summary of the requirements of the water conservation rules is provided below.

Requirements for All Large Community Water Systems and All New Small Community Water Systems Developing New Sources of Water

1. Install and maintain meters for all water withdrawals and service connections.
2. Implement a water audit, leak detection and leak repair program in accordance with the "Manual of Water Supply Practices, Water Audits and Leak Detection", document identification number AWWA M36, American Water Works Association, 1999.
3. When applicable, development and implementation of response plans to reduce unaccounted for water to less than 15%.
4. Implement a rate structure that encourages efficient water use.
5. Implement a water conservation educational outreach initiative.

Requirements for Existing Small Community Water Systems Developing New Sources of Water

1. Either: a) Install source and service connection meters and implement a water audit, leak detection and leak repair program in accordance with the "Manual of Water Supply Practices, Water Audits and Leak Detection", document identification number AWWA M36, American Water Works Association, 1999; or b) Complete a system-wide leak detection once every two years.
2. Repair all leaks within 60 days of identification.
3. Implement a water conservation educational outreach initiative.

Requirements for Applicants Developing New Sources of Water for Industrial, Commercial, or Institutional Water Uses

1. Install water meters for all water sources.
2. Retrofit or replace single pass water-cooling systems when feasible based upon an economic analysis that includes a four-year payback period.
3. Install controls to stop the overflow or discharge of water to waste when feasible based upon an economic analysis that includes a four-year payback period.
4. Identify water conservation best management practices or best available technologies that may be applicable to the types of water-using processes at the subject facility, and implement these measures when feasible based upon an economic analysis that includes a four-year payback period.
5. For all new lawn areas, install six (6) inches of loam and devices to shut-off automatic irrigation systems when not needed.

For more information about the water conservation rules, contact Brandon Kernen at 271-0660 or bkernen@des.state.nh.us.

Lewis Engineering, PLLC
Specializing in Water System Designs & Approvals

44 Stark Lane Litchfield, NH 03052

November 18, 2008

Derek S. Bennett
Water Conservation Program Manager
NHDES DWGB
P.O. Box 95
Concord, NH 03302-0095

RE: Pelham – Virginia Woods CWS – Water Conservation Plan Update

Dear Mr. Bennett:

Reference the NHDES DWGB conditional approval letter dated June 30, 2008 for the subject project. The conditional approval for the new well for the system required that the water system develop a high resolution zone metering program. The metering program is intended to minimize the volume of lost water by allowing the system operator to quickly respond to changes in the volume of water entering the distribution system during low overnight usage periods.

1. **Zone Metering:** We believe that the installation of multiple zone metering for the Virginia Woods CWS would not yield any additional data than what a single data logging water meter could obtain. At full build-out the water system will have only 40 adult housing units. There are 8 units proposed to the west of the pump house and 32 units proposed to the east of the pump house on Forest Road. With the small number of units within the community; a single distribution entry point meter in the pump house should be sufficient to obtain trending data for the water system.

2. **Instrumentation:** A 2-inch Magneto-flow Mag Meter manufactured by Badger Meter Company will be installed on the discharge side of the water booster pumps prior to exiting the pump house. The meter will be installed and maintained according to manufacturer specifications and shall comply with the procedures and protocols described in the "Manual of Water Supply Practices, Water Meters – Selection, Installation, Testing and Maintenance" document identification number AWWA M6. The Badger Mag Meter and data logger will be installed at the time of pump house construction.

3. **Baseline Trending:** The certified water system operator for Virginia Woods CWS will establish baseline flows by reviewing minimum and maximum night flows from 12 Midnight to 3:00 AM. A summer baseline (May 15th to September 15th) and a winter baseline (September 16th to May 14th) will be determined yearly until 1 year after full build-out of the water system. The water system will be pressure tested prior to placing

Tel (603) 886-4985 Fax (603) 886-5149 Lewis.h2o@comcast.net

the system online to assure that there are no leaks present when the baseline trending is started. Baseline trending will be submitted yearly.

4. **Data Review Frequency:** It is proposed that the station discharge flow rates and pressures will be recorded at a minimum of every fifteen (15) minutes by the data logger. The data will be downloaded and analyzed monthly until 10 units are occupied. After the completion of the 10th unit; the data will be downloaded and analyzed at least weekly to determine if leakage may be occurring in the water system.

5. **Leak Trigger Values:** The Virginia Woods Condo Association will direct it's Certified Water System Operator or a leak detection company to begin an active leak detection survey within three days, two weeks, and one month for large, medium, and small leaks respectively. Large leaks are classified as greater than 6 gpm above baseline, medium leaks are 3 to 6 gpm above baseline, and small leaks represent a 3 gpm increase above the established baseline flow.

6. **Leak Detection Procedures:** The Certified Water System Operator or a Leak Detection Company for Virginia Woods Condo Association shall conduct leak detection surveys in accordance with "Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999. Discovered leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Ws 390.09.

7. **Unaccounted For Water:** The Certified Water System Operator for Virginia Woods Condo Association shall estimate unaccounted for water by calculating the percentage of lowest nighttime use above the established baseline. The Certified Water System Operator will calculate this percentage monthly until 10 units are occupied. After the completion of the 10th unit; the percentage will be calculated weekly and will report the results to the NHDES DWGB quarterly.

8. **Rate Structure and Individual Household Water Meter Waiver:** The 40 adult housing units of the Virginia Woods Condo Association will have a flat rate structure as individual water meters will not be installed. The high resolution monitoring of the pump house discharge meter will provide the details required to closely monitor water usage for the 40 unit development. A waiver for the requirement of individual water meters Env-Ws 390.04 (b) (1) in each housing unit is requested. Adult housing communities have historically consumed lower volumes of water in comparison to single family housing units. Each adult housing unit will pay for the monitoring and operation of the water system through the monthly condominium fee. The condominium association will promote water conservation each Spring in an attachment to the Consumer Confidence Report.

We request that the above items be amended to the Water Conservation Plan dated July 26, 2006 and approved on August 31, 2006. Please feel free to contact this office if you should have any questions regarding the revised water conservation criteria for Virginia Woods in Pelham.

Respectfully,

Lewis Engineering, PLLC

Neil W Helberg, P.E.

cc: Keith Magarian, Owner
Bob Yarmo, Virginia Woods

Encl: